

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

MAILED

JUN 27 2006

U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MATTHEW B. HOYT, BOBBY J. BAILEY,
STANLEY A. MCINTOSH, PHILIP E. WILSON
and GARY W. SHORE

Appeal No. 2006-1003
Application 10/046,535

ON BRIEF

Before PAK, OWENS and FRANKLIN, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from a rejection of claims 1, 2, 4 and 6-8, which are all of the pending claims.

THE INVENTION

The appellants claim a method for making a stain-resistant sheath/core nylon filament having an acid-dyed nylon core and a substantially undyed nylon sheath. Claim 1 is illustrative:

1. A method of making a stain-resistant sheath/core nylon filament having an essentially undyed nylon sheath and an acid-dyed nylon core, said method comprising the steps of:

- (a) providing a dye bath containing an acid dye;
- (b) forming a nylon sheath/core filament from a nylon sheath polymer and a nylon core polymer which is surrounded entirely by the sheath polymer such that the filament contains less than about 10 wt.% of the sheath polymer, wherein the nylon sheath polymer is resistant to, and thereby remains substantially undyed by, the acid dye in the dye bath and has an amine end group (AEG) content of less than about 10 meq/kg, and wherein the nylon core polymer is susceptible to dyeing by the acid dye in the dye bath and has an AEG content of between about 10 meq/kg to about 100 meq/kg;
- (c) bringing the nylon sheath/core filament formed in step (b) into contact with the dye bath; and
- (d) allowing the acid dye in the dye bath to physically diffuse or penetrate through the sheath to dye the core while the sheath remains substantially undyed.

THE REFERENCES

Segraves et al. (Segraves)	4,069,363	Jan. 17, 1978
Anton et al. (Anton)	4,075,378	Feb. 21, 1978
Hoyt et al. (Hoyt)	5,340,886	Aug. 23, 1994
Lin	5,447,794	Sep. 5, 1995
Lijten et al. (Lijten)	5,468,555	Nov. 21, 1995

THE REJECTIONS

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 1, 4 and 6-8 over Segraves in view of Lin; claim 2 over Segraves in view of Lin and either Anton or Litjen; claims 1, 2, 4 and 6-8 over Anton in view of Lin; claims 1, 4 and 6-8 over Lin in view of Hoyt and Segraves; and claim 2 over Lin in view of Hoyt, Segraves and either Anton or Litjen.

OPINION

We reverse the rejection of claims 1, 4 and 6-8 over Segraves in view of Lin, and affirm the other rejections.

The appellants argue only the independent claim, i.e., claim 1 (brief, pages 4-9). Although additional references are applied in two rejections of claim 2, the appellants do not separately argue the patentability of that claim. We therefore limit our discussion to claim 1. See 37 CFR 41.37(c)(1)(vii) (2004).

Rejection over Segraves in view of Lin

Segraves discloses "hosiery knit from a crimpable yarn of at least one nylon filament having two continuous, adherent, eccentric components, one component being a sheath consisting

essentially of a homopolymer selected from the group consisting of polyhexamethylene dodecanedioamide, polyhexamethylene adipamide and poly- ϵ -caproamide, the other component being a core consisting essentially of a random copolymer of hexmethylene dodecanedioamide and ϵ -caproamide units" (col. 1, lines 36-45). The core accepts acid dyes very readily, and disperse dyes sometimes favor the core, leaving the sheath lighter in color (col. 4, lines 20-24).

Lin discloses an acid-dye and coffee stain resistant carpet (col. 1, lines 7-10; col. 2, lines 52-56; col. 6, lines 20-22) comprising a backing material tufted with stain resistant sheath/core bicomponent face fibers (col. 1, lines 7-9; col. 2, lines 54-56). The weight ratio of the sheath to the core can be 10:90 (col. 1, lines 41-42). The face fibers comprise a core of a first polyamide component which can be nylon 6 or nylon 6,6 (col. 1, lines 39-40), which are the appellants' most preferred core polyamides (specification, page 10, lines 5-6), covered by a sheath which can be nylon 6,12 (col. 1, lines 43-47), which is the appellants' most preferred sheath polyamide (specification, page 12, lines 2-3).

The examiner argues that Segraves' acid-dyeable core must have a large number of amine end groups, whereas the sheath which is lighter in color must have very few amine end groups (answer, page 6). The examiner, however, does not support this argument with evidence. The examiner's mere speculation is insufficient for establishing a *prima facie* case of obviousness. *See In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968); *In re Sporck*, 301 F.2d 686, 690, 133 USPQ 360, 364 (CCPA 1962).

Rejection over Anton in view of Lin

Anton discloses polyamide filaments comprising an acid-dyeable core which is at least 40 vol% of the filament, and a basic-dyeable sheath (col. 1, lines 37-50; col. 2, lines 37-47). The core contains 40-100 meq/kg of amine end groups, and the sheath normally contains about 15-40 meq/kg of amine end groups (col. 1, lines 39-42; col. 2, lines 44-47). The amine end groups increase acid-dyeability (col. 2, lines 17-20).

The appellants argue that Anton's disclosure of a sheath amine end group content of about 15-40 meq/kg leads away from an amine end group content of less than about 10 meq/kg (brief,

pages 7-8). Anton's teachings that amine end groups increase acid dyeability and that the sheath is to be basic dyeable but not acid dyeable (col. 2, lines 18-19 and 44-47) would have fairly suggested, to one of ordinary skill in the art, reducing the amine end group content of the sheath as needed to reduce its acid dyeability.

The appellants argue that Anton suggests that the low amine end group content of the sheath ensures its dyeability by basic dyes, whereas the appellants' sheath is substantially undyed (brief, page 7). Because Anton's sheath is basic dyeable rather than acid dyeable, it remains substantially undyed when exposed to an acid dye bath. As indicated by Anton's table at column 5, lines 29-39, the core becomes orange when exposed to orange acid dye, whereas the sheath merely takes on a pink tint.

For the above reasons we are not convinced of reversible error in the examiner's rejection over Anton in view of Lin.¹

¹ The appellants' claim 2 requires that the filament is trilobal, and the appellants do not separately argue that claim requirement. Consequently, for the reasons given regarding the rejection over Anton in view of Lin, we are not convinced of reversible error in the examiner's rejection of claim 2 over the combination of Segraves, Lin, and either Anton or Litjen.

Rejection over Lin in view of Hoyt and Segraves

Hoyt discloses that the acid dye staining of polyamides including nylon 6, 12 can be reduced by chemically blocking a portion of the polyamide's amine end groups such that the terminal amine group content preferably is less than 25 meq/kg (col. 1, lines 34-41; col. 2, lines 22-35; col. 4, lines, 26-34; col. 5, lines 15-42; col. 6, lines 38-47; col. 7, lines 3-18). Like the appellants (specification, page 12, lines 17-18), Hoyt blocks the amine end groups with lactones (col. 5, lines 15-42).

The appellants argue that because Lin does not ascribe any significance to a low amine end group content of either the core or the sheath, there is no suggestion for a person to go searching for a sheath having a low amine end group content (brief, page 8). Hoyt's disclosure that blocking amine end groups of a polyamide reduces staining (col. 6, lines 38-47) would have fairly suggested, to one of ordinary skill in the art, using a low amine end group content polyamide as Lin's sheath to obtain that benefit.

The appellants argue that Hoyt discloses that a sulphonated nylon polymer is necessary to obtain reduced staining (brief, page 8). Neither Lin nor the appellants limits the sheath to nonsulfonated nylon polymers. Moreover, Hoyt teaches that low amine end group content reduces the staining of nonsulfonated polyamides (table 1, examples 1-7).

The appellants, therefore, have not convinced us of reversible error in the examiner's rejection over Lin in view of Hoyt and Segraves.

DECISION

The rejection under 35 U.S.C. § 103 of claims 1, 4 and 6-8 over Segraves in view of Lin is reversed. The rejections under 35 U.S.C. § 103 of claim 2 over Segraves in view of Lin and either Anton or Litjen, claims 1, 2, 4 and 6-8 over Anton in view of Lin, claims 1, 4 and 6-8 over Lin in view of Hoyt and Segraves, and claim 2 over Lin in view of Hoyt, Segraves and either Anton or Litjen, are affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(vii).

AFFIRMED

Chung K. Pak
CHUNG K. PAK)
Administrative Patent Judge)
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